

ASSIGNMENT 8

Textbook Assignment: "Elements of Surveying and Surveying Equipment." Pages 11-1 through 11-49.

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| <p>8-1. In surveying, the relative horizontal positions of points are determined in relationship to which of the following elements-measured in the field?</p> <ol style="list-style-type: none">1. Only from distances2. Only from directions3. From either distances or directions4. From both distances and directions <p>8-2. In surveying, the vertical position of a point is determined in which of the following ways?</p> <ol style="list-style-type: none">1. By measuring directly from a datum2. By measuring indirectly from a datum3. By computation from differences in elevation that are measured directly or indirectly from a datum <p>8-3. In regard to results obtained with plane surveying methods, increasing the areas surveyed will have what effect on (a) accuracy and (b) precision?</p> <ol style="list-style-type: none">1. (a) Increase (b) decrease2. (a) Decrease (b) decrease3. (a) Decrease (b) increase4. (a) Increase (b) increase <p>8-4. When is a survey considered to be a geodetic survey?</p> <ol style="list-style-type: none">1. When the earth's curvature must be considered2. When the surface surveyed is water3. When the data from the survey will be used for mapping4. When the survey is either a ground or an aerial survey | <p>8-5. Reestablishing an old property boundary from missing monuments.</p> <ol style="list-style-type: none">1. A2. B3. C4. D <p>8-6. Determining the directions and elevations of a new highway.</p> <ol style="list-style-type: none">1. A2. B3. C4. D <p>8-7. Laying out the corners of a new building.</p> <ol style="list-style-type: none">1. A2. B3. C4. D <p>8-8. Gathering data about the natural and man-made features of the land.</p> <ol style="list-style-type: none">1. A2. B3. C4. D <p>8-9. Gathering information needed to prepare as-built drawings for a completed project.</p> <ol style="list-style-type: none">1. A2. B3. C4. D <p>8-10. Which of the following types of surveys is also known as an engineering survey?</p> <ol style="list-style-type: none">1. Route2. Construction3. Topographic4. Cadastral <p>8-11. In surveying practice, which, if any, of the following tasks is considered to be an element of office work?</p> <ol style="list-style-type: none">1. Computing and plotting necessary information2. Taking measurements3. Collecting engineering data4. None of the above |
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- IN ANSWERING QUESTIONS 8-5 THROUGH 8-9, SELECT THE TYPE OF SURVEY THAT SHOULD BE USED TO ACCOMPLISH THE TASKING DESCRIBED.
- A. TOPOGRAPHIC SURVEY
B. CONSTRUCTION SURVEY
C. ROUTE SURVEY
D. LAND SURVEY

8-12. When engineering data for a SEABEE construction project is being collected, which of the following items or information should be considered?

1. Climatology in the local area of the project site
2. Availability of labor and materials
3. Accessibility of construction equipment to the project site
4. All of the above

8-13. In general, which, if any, of the following actions will best predetermine field conditions and allow the selection of methods to be used for a survey?

1. Reviewing topographic maps
2. Site reconnaissance
3. Checking local weather conditions
4. None of the above

8-14. Which of the following factors makes the difference between a good surveyor and an exceptional surveyor?

1. The ability to collect data quickly
2. Consistent accuracy in fieldwork
3. The ability to exercise sound and mature common sense
4. The habit of ensuring that all survey results are verified before acceptance

8-15. Which of the following conditions must be considered when you determine the size of a field survey party?

1. The availability of equipment
2. The methods that will be used
3. The requirements of the survey
4. All of the above

8-16. A transit party should consist of at least what three persons?

1. Instrumentman, rodman, and note keeper
2. Rodman, head chainman, and party chief
3. Instrumentman, head chainman, and note keeper
4. Party chief, head chainman, and instrumentman

8-17. In a plane table party, the party chief functions as what team member?

1. Topographer
2. Rodman
3. Computer
4. Head chainman

8-18. In field notebooks, all lettering should be performed in a freehand Gothic style with which of the following grades of pencil lead?

1. 2H or 3H
2. 3H or 4H
3. 4H or 5H
4. F

IN ANSWERING QUESTIONS 8-19 THROUGH 8-21, SELECT THE PART OF THE FIELD NOTEBOOK FROM THE FOLLOWING LIST THAT SHOULD CONTAIN THE INFORMATION DESCRIBED.

- A. FRONT COVER
B. INSIDE FRONT COVER
C. RIGHT-HAND PAGES

8-19. Name and location of the project, the types of measurements, and the designation of the survey unit.

1. A
2. B
3. C

8-20. List of party personnel and their duties.

1. A
2. B
3. C

8-21. Instructions for returning the notebook if it is lost.

1. A
2. B
3. C

8-22. In keeping field notes, which of the following procedures is/are mandatory?

1. Notes are never kept on individual scraps of paper for later transcription to notebooks
2. Erasures are never permitted; incorrect entries are lined-out and correct entries inserted
3. Rejected pages are neatly crossed-out and referenced to the substituted pages
4. All of the above

- 8-23. In a measured distance that required 200 measurements, the total error was -9 units. For this error to be adjusted, each measurement must be
1. increased by 0.450
 2. increased by 0.045
 3. decreased by 0.450
 4. decreased by 0.045
- 8-24. A measured distance is 302.12 feet. This measurement contains what total number of significant figures?
1. Five
 2. Two
 3. Three
 4. Four
- 8-25. If you round off 92.454 to three significant figures, what is the resulting number?
1. 92.4
 2. 92.5
 3. 92.40
 4. 92.50
- 8-26. When drawing a property map, you should include which of the following items?
1. The length and direction of each boundary line
 2. Reference points referred from an established coordinate system
 3. Names of important details, such as roads, streams, and landmarks
 4. All of the above
- 8-27. In an orientation symbol, a full-head arrow represents what direction or orientation information, if any?
1. Magnetic meridian
 2. True meridian
 3. Magnetic declination
 4. None
- 8-28. Which of the following factors will influence the orientation of a map drawn on standard size drawing paper?
1. The shape of the mapped area
 2. The size of the mapped area
 3. The scale of the map
 4. The purpose of the map
- 8-29. A map that should be used for making a model of an 18-hole golf course is known as what type?
1. Geographic
 2. Planimetric
 3. Topographic
- 8-30. An ordinary road map of the state of Florida is an example of what type of map?
1. Geographic
 2. Planimetric
 3. Topographic
- 8-31. A naval station base map that shows only the layout of buildings and roads is what type of map?
1. Geographic
 2. Planimetric
 3. Topographic
- 8-32. The various parts of a transit are divided into three major groups. Which of the following is NOT a major group?
1. Telescopic assembly
 2. Upper plate assembly
 3. Lower plate assembly
 4. Leveling assembly
- 8-33. What part of a transit contains the graduated scale for determining the value of horizontal angles?
1. Upper plate
 2. Lower plate
 3. Alidade
 4. Leveling head
- 8-34. What part of a transit is used for slow motion movement when the telescope is being centered on an object?
1. Clamp
 2. Lower motion screw
 3. Upper motion screw
 4. Tangent screw
- 8-35. In addition to the two plate-level vials, the transit has a third level vial. What is the third vial used to level?
1. Tripod head
 2. Standard
 3. Footplate
 4. Telescope

8-36. What part of a transit is graduated from 0° to 90° in four quadrants?

1. Horizontal circle
2. Vertical circle
3. A-vernier
4. Double vernier

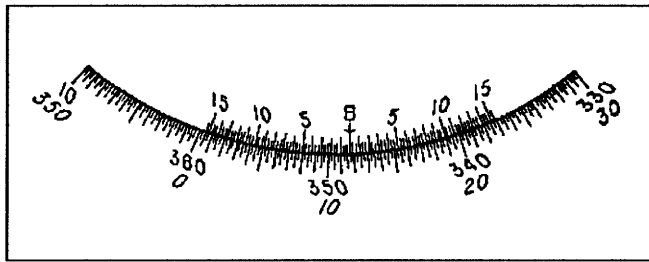


Figure 8A

IN ANSWERING QUESTIONS 8-37 AND 8-38, REFER TO FIGURE 8A.

8-37. The least reading of the horizontal scale shown is

1. 20 seconds
2. 30 seconds
3. 45 seconds
4. 1 minute

8-38. Reading clockwise, the vernier reads

1. $11^\circ 36' 00''$
2. $28^\circ 30' 00''$
3. $348^\circ 20' 00''$
4. $351^\circ 45' 00''$

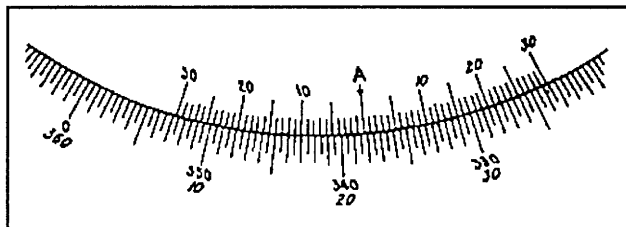


Figure 8B

IN ANSWERING QUESTIONS 8-39 AND 8-40, REFER TO FIGURE 8B.

8-39. The least reading of the horizontal scale shown is

1. 20 seconds
2. 30 seconds
3. 45 seconds
4. 1 minute

8-40. In a counterclockwise direction, the vernier reads

1. $341^\circ 45'$
2. $338^\circ 15'$
3. $39^\circ 10'$
4. $21^\circ 47'$

8-41. For a 1-minute theodolite, which of the following actions occur when the circle clamp is in the lever-down position?

1. The circle is clamped and turns with the telescope
2. The circle is clamped and the telescope turns independently
3. The circle is unclamped and the telescope turns independently
4. The circle is unclamped and turns with the telescope

8-42. The lower half of the vertical line on the reticle of a theodolite is split for what purpose?

1. To center triangular-shaped distant objects
2. To determine the width of distant objects
3. To center small distant objects
4. To determine the height of distant objects

8-43. What part of an engineer's transit serves the same function as the tribrach of the theodolite?

1. Leveling assembly
2. Lower plate
3. Upper plate
4. Standard

8-44. What are the values read from the vertical circle of a theodolite called?

1. Vertical angles
2. Direct angles
3. Zenith distances
4. Direct distances

8-45. What part of a one-second theodolite is used to select whether the angle being read is a vertical or horizontal angle?

1. Circle tangent screw
2. Inverter knob (circle-selector)
3. Circle setting knob
4. Circular level

- 8-46. The difference between two diametrically opposite members on the circle of a one-second theodolite as viewed through the circle reading microscope is equal to plus or minus how many degrees?
1. 90°
 2. 180°
 3. 270°
 4. 360°
- 8-47. What is the main difference between a wye level and a dumpy level?
1. Their magnifying power
 2. The way they are used in the field
 3. The way their telescopes are attached to the horizontal (level) bar
 4. The way their horizontal bars are attached to the leveling head
- 8-48. What part(s) of a telescope should you adjust to bring the cross hairs and the object into clear focus?
1. Eyepiece
 2. Focusing knob
 3. Both 1 and 2 above
 4. Reticle adjusting screw
- 8-49. The bubble of a level vial on a surveying instrument may become increasingly difficult to center because of what factor?
1. Temperature
 2. Vial age
 3. Humidity
 4. Vial sensitivity
- 8-50. On a tilting level, which of the following screws is used to bring the bubble to the exact center?
1. Tangent
 2. Micrometer
 3. Leveling
 4. Centering
- 8-51. You are setting up a military level. You can accomplish preliminary leveling by using which of the following parts?
1. The level vial and circular bubble
 2. The leveling screws and the micrometer drum
 3. The leveling screws and the circular bubble
 4. The leveling screws and the level vial
- 8-52. The purpose of the compensator in a self-leveling level is to compensate for which of the following factors?
1. Misalignment of the vertical hair only
 2. Misalignment of the horizontal hair only
 3. Misalignment of both the vertical and horizontal hairs
 4. A slight out-of-level of the telescope
- 8-53. In surveying, what instrument is often called the universal survey instrument?
1. Theodolite
 2. Engineer's transit
 3. Wye level
 4. Automatic level
- 8-54. The Abney hand level differs from the plain hand level in that it has what additional part?
1. A spirit level
 2. An eyepiece
 3. An optical telescope
 4. A graduated arc
- 8-55. Which of the following advantages does use of the plane-table and alidade provide over use of other surveying instruments?
1. The need to measure horizontal distances is eliminated
 2. The need to measure vertical and horizontal angles is eliminated
 3. Both 1 and 2 above
 4. A completed sketch or map manuscript is produced in the field
- 8-56. Which of the following methods can be used to orient a plane table during fieldwork?
1. A transit
 2. A magnetic compass
 3. Sight on a point whose position is plotted on the plane table
 4. Either 2 or 3 above, depending on preference
- 8-57. What is the maximum angle above the horizontal that a telescopic alidade is capable of measuring?
1. 15°
 2. 30°
 3. 45°
 4. 60°

- 8-58. Which of the following alidade attachments is used for accurate leveling of the line of sight?
1. Circular level
 2. Striding level
 3. Right-angle prism
 4. Vertical circle scale
- 8-59. What type of assembly, when attached to the alidade, makes it possible to determine horizontal distances and differences in elevation by the stadia method?
1. Ball and socket
 2. Optical reading
 3. Stadia arc
 4. Exterior arc
- 8-60. Which of the following tools should you use when clearing away small saplings and vines?
1. Chain saw
 2. Brush hook
 3. Coping saw
 4. Bull point
- 8-61. Which of the following tools is best suited for driving pipe markers into asphalt surfaces?
1. A hatchet
 2. A single bit ax
 3. A sledgehammer
 4. A bull point
- 8-62. Which of the following tools should you use to lift a manhole cover?
1. A long-handled shovel
 2. A crowbar
 3. A long-bladed screwdriver
 4. A machete
- 8-63. Which, if any, of the following devices is used to locate buried metal markers?
1. Dip needle
 2. Mine detector
 3. Probing steel
 4. None of the above
- 8-64. Which of the following tapes should be used for the high-precision measurement of a base line that is in the vicinity of a high-voltage circuit?
1. Metallic
 2. Nonmetallic
 3. Steel
 4. Invar
- 8-65. To run a traverse in steep terrain on a windy day, which of the following tripods should you use to support the transit?
1. Stilt-leg
 2. Wide-frame rigid
 3. Wide-frame jack-leg
 4. Jack-leg
- 8-66. After you secure the restraining strap, what is the next step in setting up a tripod?
1. Hold one leg only close to your body
 2. Hold two legs close to your body
 3. Spread the legs 60° apart
 4. Spread the legs until they form about a 50° to 60° angle with the horizontal
- 8-67. Which of the following actions is NOT a proper way to care for a tripod?
1. Applying pressure across the tripod legs when pressing the tripod into the ground
 2. Adjusting the hinge joint without overtightening
 3. Applying a light coat of oil on the metal parts of the tripod
 4. Applying pressure along the tripod legs when pressing the tripod into the ground
- 8-68. The effectiveness of the plumb bob, cord, and target set as a precision instrument will be most impaired by what condition?
1. Faded paint on the target
 2. Dust on any part of the set
 3. A damaged or bent tip on the plumb bob
 4. A worn leather sheath
- 8-69. Which of the following tape accessories should be used to hold the tape securely at an intermediate point?
1. Tape clamp handle
 2. Tension scale
 3. Taping stool
 4. Staff

- 8-70. In high-precision measurement, which of the following tape accessories should be used to mark accurately the distance indicated by the tape graduation?
1. Tension scale
 2. Taping stool
 3. Staff
 4. Tape thermometer
- 8-71. When target reading is being performed, what survey party member reads the rod?
1. Chainman
 2. Instrumentman
 3. Flagman
 4. Rodman
- 8-72. During leveling operations, in which of the following soil conditions should you use a turning point plate?
1. Sandy or muddy soil
 2. Compacted gravel
 3. Ordinary stable soils
 4. Rocky pasture land
- 8-73. The type of material to be used for survey point markers depends upon which of the following conditions?
1. The location of the point
 2. Whether the point is temporary or permanent
 3. Both 1 and 2 above
 4. The discretion of the engineer officer
- 8-74. Which of the following types of markers is/are generally used for horizontal and vertical control stations?
1. Iron pipe filled with concrete
 2. Bronze disks set in concrete
 3. A hole drilled in concrete and filled with lead
 4. Each of the above
- 8-75. What method should you use to permanently mark a station located on an asphaltic concrete surface?
1. Nail a spad into the surface
 2. Drive a railroad spike into the surface
 3. Spot paint the surface
 4. Drive a wooden hub into the surface